DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-017228
Date Inspected: 01-Oct-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 900
OSM Departure Time: 1730
Location: Job Site

CWI Name:	See Below			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Orthotropic Box Girders

Summary of Items Observed:

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the following work performed by American Bridge/Fluor Enterprises (AB/F) personnel at the locations noted below:

A). Field Splice W6/W7
B). Ventilation Access Hole, Insert Plate
C). Erection Access Hole, Insert Plate
D). Field Splice E6/E7

A). Field Splice W6/W7

The QAI observed the excavations and the repair welding of the areas marked as UT rejects on the Complete Joint Penetration (CJP) groove weld identified as WN: 6W-7W-A5. The excavations and welding of the repairs was performed by the welder Fred Kaddu ID-2188 utilizing the Shielded Metal Arc Welding (SMAW) process and 3.2 mm electrode as per the Welding Procedure Specification (WPS) identified as ABF-WPS-1000 Repair Rev. 2. The WPS was also used by the QC inspector, James Cunningham, as a reference to monitor and verify the Direct Current welding parameters. The welding parameters were verified by the QC inspector and observed by the QAI as 117 amps. The welding was performed in the flat position (1G) with the work positioned placed in an approximately horizontal plane and the weld metal deposited from the upper side. The minimum preheat temperature of 40 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius appeared to comply with the contract documents. The repairs are in the R1 cycle.

Also, at the conclusion of the excavations the QC inspector, Tom Pasqualone, performed the Magnetic Particle Test (MPT) of the excavated areas and no rejectable indications were noted. The application and evaluation of the MPT appeared to comply with the MPT procedure identified as SE-MT-CT-D1.5-101 Rev. 4.

The QAI also, observed the Ultrasonic Testing (UT) of the Complete Joint Penetration (CJP) groove weld of the deck plate field splice identified as WN: 6E-7E-A1, A2, A3 and A4. The testing was performed by the QC technicians Tom Pasqualone, John Pagliero and Jesse Cayabyab utilizing a G.E./Krautkramer USM 35X. The examination of the CJP was conducted utilizing UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4 and the applicable contract documents. The QC technicians performed the required longitudinal wave technique, utilizing a 25.4mm diameter transducer, to perform the examination for base metal soundness and the shear wave technique for the examination of weld soundness which was performed utilizing a 16mm x 19mm rectangular transducer.

Later in the shift, the QAI observed the Shielded Metal Arc Welding (SMAW) process of the edge plate field splice identified as Weld Number (WN): 6E-7E-F1. The welding was performed by Jin Pei Wang ID-7299 utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-1110A, Rev. 1. The WPS was also used by the Quality Control (QC) Inspector James Cunningham to verify the Direct Current Electrode Positive (DCEP) welding parameters and to monitor the Complete Joint Penetration (CJP) welding. The QAI observed the QC inspector verifying the welding parameters and were noted as 130 amps. The minimum preheat temperature of 20 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius appeared to comply with contract documents. The welding was performed in the vertical (3G) position with the work placed in an approximately vertical plane with the groove approximately vertical.

B). Ventilation Access Hole, Insert Plate

The QAI observed the Ultrasonic Testing (UT) of the Complete Joint Penetration (CJP) groove weld on the Ventilation Access Hole, Insert plate identified as WN: 1E-PP10.5-E5-L1E-N. The testing was performed by the QC technician Steve McConnell utilizing a G.E./Krautkramer USM 35X. The examination of the CJP was conducted utilizing UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4 and the applicable contract documents. The QC technician performed the required longitudinal wave technique, utilizing a 25.4mm diameter transducer, to perform the examination for base metal soundness and the shear wave technique for the examination of weld soundness which was performed utilizing a 16mm x 19mm rectangular transducer. At the conclusion of the welding no rejectable indications were noted by the QC technician.
Later in the shift, the QAI observed the excavations of rejectable flaws discovered by the Ultrasonic Testing (UT) technique. The excavation process was performed by the welder, Hua Qiang Hwang ID-2930, utilizing a high cycle 4" grinder.

C). Erection Access Hole, Insert Plate

The QAI observed the continued excavations and repair welding of the unacceptable discontinuities discovered during the Ultrasonic Testing (UT) performed by QC/UT technicians. The repair welding was performed on the erection access hole insert plate identified as Weld Number (WN): 1E-PP8.5-W1 and W2, Repair cycle R2, on the "A" deck of the Orthotropic Box Girder (OBG) E1. The welder, Darcel Jackson ID-9967, performed the welding utilizing the Shielded Metal Arc Welding (SMAW) as per the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-1001 Repair, Rev. 0. The WPS was also utilized by the QC inspectors Steve McConnell as a

reference to monitor the welding and verify the Direct Current Electrode Positive (DCEP) welding parameters which was recorded as 125 amps by the QC inspector. The 3.2 mm Lincoln electrode was utilized with the welding performed in the flat (1G) position with the work in an approximate horizontal plane and the weld metal deposited from the upper side. The groove joint appeared to comply with the AWS joint designation identified as B-U4a. The minimum preheat temperature of 20 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius were verified by the QC inspector.

The QC inspector, Mr. McConnell, also performed the Magnetic Particle Test (MPT) of the excavated areas and no rejectable indications were noted. The application and evaluation of the MPT appeared to comply with the MPT procedure identified as SE-MT-CT-D1.5-101 Rev. 4.

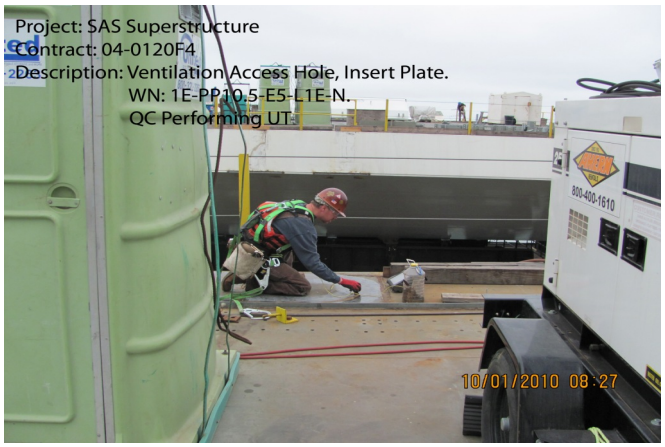
D). Field Splice E6/E7

The QAI observed the removal of the backing bar on the weld joint identified as Weld Number (WN): 6E-7E-C1 and C2. The removal of the steel backing was performed by the welders Rory Hogan and Jeremy Dolman utilizing the plasma arc cutting method.

QA Observation and Verification Summary

The QA inspector observed the QC activities and the welding of the field splices utilizing the WPS as noted above, which appeared to be posted at the weld station. The welding parameters and surface temperatures were verified by the QC inspector and utilizing a Fluke 337 clamp meter for the electrical welding parameters and a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. The ESAB consumables utilized for the SMAW welding process appeared to comply with the AWS Specification and AWS Classification. The QC inspection, testing and welding performed on this shift appeared to be in general compliance with the contract documents. At random intervals, the QAI verified the QC inspection, testing, welding parameters and the surface temperatures utilizing various inspection equipment and gages which included a Fluke 337 Clamp Meter and Tempilstik Temperature indicators.

The digital photographs below illustrate the work observed during this scheduled shift.



WELDING INSPECTION REPORT

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Summary of Conversations:

There were general conversations with Quality Control Inspector Bonifacio Daquinag, Jr. at the start of the shift regarding the location of American Bridge/Fluor welding, inspection and N.D.E. testing personnel scheduled for this shift.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Reyes,Danny	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer